VI. Assessment of Program Effectiveness
City of Malibu
FY 2011-2012

A. Summary of the effectiveness of your storm water management program.

1. An assessment of your agency's compliance with permit requirements, based on your responses to the questions in this form

The City of Malibu has placed water quality as a very high priority and has worked hard to meet and exceed the requirements of this order.

2. Descriptions of any evaluation methods that your agency uses to determine the effectiveness of your storm water management program

The effectiveness of the storm water management program can be evaluated by the increased level of public awareness, increased amount of public input and public reporting of concerns, as well as the City Council and staff's strong commitment and proactive approach to clean water. Staff also assesses the effectiveness of the program internally just in witnessing the interdepartmental communication improvements and quality of reporting and documentation received from staff. See question 5 below for further discussion regarding water quality improvements.

3. A summary of the strengths and weaknesses of your agency's storm water management program

The strengths of our Clean Water program are:

- Committed City Council, management and staff
- Powerful, aggressive policy and regulations (in addition to the City of Malibu Storm Water Management and Discharge Control Ordinance) including restrictive zoning ordinance and LCP, no smoking on beach ordinance, ban on expanded polystyrene packaging ordinance, ban on plastic shopping bags ordinance, OWTS point of sale ordinance, administrative fines ordinance.
- Malibu Area Conservation Coalition efforts (formerly the Malibu Water Conservation Partners group) focusing on water quality protection through water conservation
- Robust and proactive commercial facilities inspection program - in particular the Clean Bay Restaurant Certification program, and that all targeted commercial facilities inspections are conducted annually rather than the required two times per permit cycle
- Structural BMPs
    - Civic Center Stormwater Treatment Facility
    - Paradise Cove Stormwater Treatment Facility
    - Legacy Park
    - Broad Beach Road Biofiltration- new project funded by Proposition 84, currently in design

        - Wildlife Road Treatment and Focused Outreach- new project funded by Proposition 84, currently in design
    - Responsive and active community
    - Strong public education efforts
        - Including the ASBS focused outreach portion of the Wildlife Road project
        - New focus on delivering messages through social media (Facebook and Twitter)
    - Proactive collaboration between multiple City departments, several public agencies, and non-government organizations
    - Extensive review process for all new development and construction
    - Continuous efforts to improve and develop the City's Environmental Programs overall with focus on Clean Water Program and sustainability
    - The City reorganized as of July 1, 2011 to include a new Environmental Sustainability Department
    - Extra staff training including on internal procedures and documentation, construction BMPs, and low impact development
    - Supporting staff in ongoing environmental training, and staff that voluntarily advances their environmental education outside of work
    - Continued improvements to complaint response and documentation procedures
    - Construction inspection documentation improvements

Weaknesses of the Clean Water Program include:

- Limitations on funding and staff resources
- Record keeping and document management is difficult
    - Staff continues working on options to integrate information into a multi-department, comprehensive database (based off of the system already used by the Planning Department and the development of the new permitting software)
- Storm Drain System (City, County, other agency, and privately owned) records contain inconsistencies, old records from before incorporation sometimes provide inadequate information on private drains, ownership must be confirmed, and a process is needed for updating records as changes are made to the system
    - The City has taken steps to document (by photo and GPS handheld device) culverts in the public right of way; due to limitations on funding and staff resources this project is on-hold until additional resources become available.
- Limited or no jurisdictional powers over State and County roadways, State parks and open space areas owned by other organizations (within City limits), and school districts that may drain to the City's MS4
- Challenges with reaching property owners or responsible parties
    - The focused outreach portion of the Wildlife Road project, which began in October 2011, explores and implements outreach strategies. The position's primary focus is outreach in the ASBS area, and early findings indicate that the primary dry-weather discharges of issue are excess irrigation runoff (a source that can be controlled through education). Additionally, the City hired a Media Information Officer who has been working to help increase awareness of City Environmental Programs and public messaging.

- No City business license program to efficiently identify and track the numbers, types, and locations of businesses operating in the City limits
    - City Council intermittently takes up this issue to look more closely at implementing a licensing program. There is not support at this time.

4. A list of specific program highlights and accomplishments

- Proposition 84 ASBS grant projects- (two mentioned above) the City has executed funding agreements with the State Water Board and the project are progressing according to the grant schedule. Construction of the projects must be finished by early 2015.
- Legacy Park- City's central park that includes stormwater detention basins linked to the Civic Center Stormwater Treatment Facility, intermittent wetlands, subsurface wetlands, restoration of riparian habitat and environmental education opportunities, has been complete and operational as of October 2010. This park has received seven prestigious awards since it was completed, including the American Society of Civil Engineers' prestigious *Project of the Year Award.*
- Civic Center Linear Trail (the City has applied for funding to complete this)- this will encourage foot traffic to local shopping areas and parks, reducing vehicular trips
- Trancas Canyon Park- completed and open as of July 2010 (with dog park, multi-use sports field, playgrounds, and picnic area)
    - Mentioned for the designated area for dogs and the BMPs that went into its design, as well as the native plantings in the landscaping and the permeable paving used in the parking area
- Enhanced commercial inspections and partnership in the Clean Bay Restaurant Certification Program- restaurant inspections are now conducted annually rather than the required two times per permit cycle and businesses which meet 100% of the criteria have the incentive to be "certified"; gas stations and automotive service stations are also now inspected annually
- Ordinances preventing marine debris (smoking on beach, expanded polystyrene packaging, and plastic shopping bag bans previously mentioned in strengths)
- Frequent outreach (printed and on website) through newsletters, community calendars, and the environmental programs section of the City's website
- Stream restoration projects- Solstice Creek Bridge Replacement, and Las Flores Canyon Creek Restoration and Park Project
- Malibu Civic Center Stormwater Treatment Facility- Complete and Operational
- Paradise Cove Stormwater Treatment Facility- Complete and Operational
- Marie Canyon Treatment Facility- Operational (County owned and operated)
- Cross Creek Road Improvements (with native vegetation landscaping and permeable surfaces)- Complete

5. A description of water quality improvements or degradation in your watershed over the past fiscal year

The City is not aware of any water degradation over the past year in any of the creeks or the Santa Monica Bay. The City's programs and projects provide better protection to ambient water quality, therefore improvements to water quality may be assumed. However, even with these

aggressive efforts, improvements in the receiving water may not be quantifiable due to sources of fecal indicator bacteria from uncontrollable natural influences. Data is increasingly showing that fecal indicator bacteria exceedances are not anthropogenically caused. Two examples (using the watersheds with higher densities of development) follow.

The City can attest to improved water quality discharging from Ramirez Canyon Creek at Paradise Cove beach as a result of the treatment facility that the City installed there in 2010 to treat runoff from the Ramirez Canyon watershed. Ramirez Canyon watershed overall is 78% undeveloped, with 2.3 % high density residential development and 18.5% low density residential development focused in the bottom third of the watershed.[1] Two years of data shows that water discharging from the outlet of the facility (which consists of diverted and then treated creek water at a privately owned channelized portion of the creek) consistently exhibits testing results for fecal indicator bacteria below or close to the laboratory method detection limits.

The treatment facility has a total treatment capacity of 3,600 gpm for gross solids and sediment removal, and up to 900 gpm capacity for disinfection.[2] The treatment facility was designed to meet the water quality objectives set forth in the Santa Monica Bay Beaches Bacteria TMDL for summer and winter dry weather, and wet weather periods for all but the wettest of rainfall years.[3] Flow monitoring in the channel upstream of the facility in the first wet season post-construction showed that the facility has the capacity to treat all dry weather flows and most wet weather events, with highest flows peaking around 4,000 gpm with some isolated un-sustained peaks of 10,000 gpm or greater (suspected due to higher storm flows or debris fouling the measurements). Staff made note while inspecting the facility of whether there was any flow beyond the sump (inlet to the facility), and observed that in dry weather the channel was regularly dry with the exception of extreme tides exhibiting "reverse flow" and thereby filling the channel with ocean water, sand, and kelp.

Even with all dry weather flows being treated, exceedances in the wave wash at the beach persist. Additional sampling conducted over the past two years showed that once the treated water contacted the sand and kelp wrack, fecal indicator bacteria levels increased dramatically. Any exceedances of fecal indicator bacteria on the beach at this creek outlet are a result of outside influences, in particular bacteria generated from the accumulation of natural organic material such as kelp wrack or bird feces.

Another example is the City's construction of both the Civic Center Stormwater Treatment Facility (SWTF) and Legacy Park to divert drains in the Civic Center area (both are discussed more in attachment 11-12 III- SQMP to this annual report) that capture runoff in the 337 acre subwatershed (a portion of the Malibu Creek Watershed) that would otherwise discharge to lower Malibu Creek and Lagoon. Malibu Creek Watershed overall is about 80% undeveloped,

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1 Los Angeles Regional Water Quality Control Board, January 24, 2002, Santa Monica Bay Beaches Bacteria TMDL- Attachment A to Resolution No. 02-004.

[2] Prior to construction of the facility in 2006, daily stream flows (as measured by Santa Monica Baykeeper) only exceeded 900 gallons per minute (gpm) following rain storms of greater than 1 inch, and stream flows dropped below 900 gpm approximately 24 hours following the rain events.

3 October 2011. Brown. Final Project Certification for the Paradise Cove Stormwater Treatment System Project. Prepared for: State Water Resources Control Board State Revolving Fund Project No. C-06-6969-110, Agreement No. 08-354-550 (Previously Agreement No. 06-298-550-0).

with a mixture of 13% residential, 4% commercial, and 3% agricultural land uses.[4] Flows from runoff are detained in the 8 acre foot pond in the park, then filtered and disinfected through ozonation by the SWTF for use in irrigation or to be circulated back to the detention pond. This has resulted in the diversion of all County and City MS4 drains that could otherwise potentially affect sampling sites at Surfrider Beach. Because of this system, there is no discharge to the lower Malibu Creek and Lagoon, except in extreme circumstances where treated flows exceed the capacity of the detention pond, which would generally occur during very large rain events or back-to-back storms when irrigation water is not needed. Even then, high quality water would be discharged to the County box culvert and then to the Creek. Yet, exceedances of fecal indicator bacteria persist at the beach in absence of MS4 discharges.

The United States Geological Survey (USGS) completed a study[5] evaluating the occurrence, distribution and sources of FIB and nutrients in shallow groundwater, Malibu Lagoon and near-shore ocean waters in dry and wet weather. The final peer reviewed manuscript has recently been published and can be viewed here http://iris.lib.neu.edu/aes/vol6/iss1/4/. The results show that in dry weather, FIB was coming from surface deposits along the berm and nearby sand, as well as from the bottom of the Lagoon, as it was disturbed during tidal activity. The USGS is learning that bacteria in the near-shore ocean were associated with tidal fluxes, with highest bacteria concentrations occurring during high tide. This is consistent with wave run-up on the beach washing FIB from the wrack line and beach sands. Again, this is another example of exceedances of fecal indicator bacteria on the beach at a creek outlet as a result of uncontrollable outside influences and not due to discharges from an MS4. This, and more information on natural sources has been provided to the RWQCB staff in various letters, most recently the City's April 30, 2012 response to request for information regarding exceedances observed at shoreline monitoring sites, and the May 7, 2012 comments on the Santa Monica Bay Beaches Bacteria TMDLs reconsideration.

Further, other researchers are confirming that environmental factors influence bacteria exceedances along Malibu's coast to a greater extent than previously considered. Published research undertaken by UCLA and Stanford[6] confirms the USGS results that kelp and bird and brine fly feces deposited in the kelp wrack directly influence water quality. The studies have shown that the source or combination of sources of FIB to near-shore ocean water is not precisely known, but includes sources other than stormwater. The City of Malibu has requested that the Regional Water Quality Control Board consider allowing natural sources exclusions for fecal indicator bacteria exceedance rates for the Santa Monica Bay Beaches and Malibu Creek and Lagoon Bacteria TMDLs. Regardless of the existence of natural sources, the City will maintain its aggressive water quality program to ensure that it captures, controls, and prevents pollution sources where feasible.

6. Interagency coordination between cities to improve the storm water management program

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4 February 2007. CDM. Integrated Total Maximum Daily Load Implementation Plan for the Malibu Creek Watershed. Prepared for the Los Angeles County Department of Public Works.

5 2009. Preliminary Summary Letter from P. Martin of USGS Regarding Cooperative Water-Resources Study. Malibu, California.

6 April 2011. Imamura et. al. Wrack promotes the persistence of fecal indicator bacteria in marine sands and seawater.

The City is involved in at least 14 interagency water quality management committees which help to improve the City's storm water management program, and actively participates when these groups convene.

1. Malibu Creek Watershed Management Committee
2. Malibu Creek TMDL Working Group (meets as part of #1 above)
3. LA County Public Outreach Strategy Meetings
4. Santa Monica Bay Beaches Jurisdictional Leads Ad Hoc Committee (has not met this past reporting year)
5. Santa Monica Bay Beaches Jurisdictional Groups 1 and 4 Committee (has not met this past reporting year)
6. North Santa Monica Bay Watersheds Steering Committee of the Greater Los Angeles County Integrated Regional Water Management Planning Group
7. Greater Los Angeles County Integrated Regional Water Management Planning Group Leadership Committee
8. Malibu Creek Watershed Council and relevant subcommittees- Monitoring Technical Advisory committee, and Education committee
9. Santa Monica Mountains Watershed Council
10. Los Angeles County NPDES Permit Executive Advisory Committee
11. LA Stormwater Permit Group
12. Bight 2013 ASBS Group
13. Malibu Area Conservation Coalition (formerly the Malibu Water Conservation Partners)
14. Beach Water Quality Work Group

7. Future plans to improve your agency's storm water management program

- Recognition for public and staff that are active in the Clean Water Program
- Research more feasible means to improve water quality and public health messaging: it is hoped that with Proposition 84 funds, the new 2 year Coastal Preservation Specialist will identify successful outreach methods and serve as a model for a potential future permanent City field staff position; the City continues to be involved in several projects for assessing water quality and public health issues
- Continue to cultivate partnerships with water providers & distributors for new ways to conserve water and prevent runoff
- Create internal procedure for documenting inspections through a better functioning database- proposed for this year
- Implement a Storm Drain Identification program- ongoing
- Improve storm drain system records management- ongoing
- Compliance with SWRCB's ASBS Ocean Plan Exception and Special Protections (issued by the SWRCB during this reporting year and for which the City has begun implementing the aggressive compliance program spelled out in the Special

Protections). Examples of obligations under the program include elimination of the City's non-authorized, non-stormwater discharges.

- Ocean Health Assessment – the City has allocated $250,000 towards an Ocean Health Near-Shore Water Quality Assessment. The CIty's Assessment will focus on assessing public health risks at local beaches and providing the public with timely and meaningful information on such risks. The primary goals of the Ocean Health Assessment are to identify safe and healthy beaches within the City of Malibu and notify the public of beach water quality and any potential health risks in a timely manner. The information gathered from the assessment will help the City, and all stakeholders, better understand the coastal hydrology in the Santa Monica Bay.

Other projects which are expected to improve the City's stormwater and water quality monitoring programs are included in attachment 11-12 MBU RWL to this report.

8. *Suggestions to improve the effectiveness of your program or the County model programs*.

The City feels its program is effective. The primary limiting factor is available resources and in a broader context, understanding and addressing natural and non-stormwater related sources of pollutants. This is something the scientific community is just beginning to fully grasp, and the City is spending significant time and money to understand the complexity of the environmental influences and coastal hydrology in the Santa Monica Bay.

Additionally, the RWQCB plans to adopt a new MS4 permit this fall. The Model programs will be revised and revamped in accordance with that new permit.

B. *On a scale of 1 to 10, rate your municipality's level of compliance with Order No. 01-182*: The City rates its level of compliance at a 9.5. Tracking and documentation improvements are the greatest challenge for the City due to limited resources. However, major improvements have been made to these processes over the term of the permit. Furthermore, the City goes well above and beyond the minimum requirements of this permit order to protect water quality.

C. *List any suggestions your agency has for improving reporting and assessment.*

There needs to be an acknowledgement that water quality in the receiving waters should not be the *only* indication in an assessment of whether a program is working and protecting water quality. Natural sources can still be a major factor for constituents in water, and the size of watershed can have a major influence on water quality even when minimally developed. The Regional Board and permittees need to look into and consider better and more consistent methods to assess the effectiveness of the stormwater management program, such as metrics to assess program success (and not just water quality data).

See Report of Waste Discharge submitted to the Regional Board on June 12, 2006 for full description of suggestions for improving reporting and assessment. In particular the following annual report questions yield information that is mostly irrelevant to achieving the goals of the Permit. It is recommended that the following Annual Report questions be eliminated:

• Section IV.C.7 – How many of each of the following projects did your agency review and condition to meet SUSMP requirements last year?

• Section IV.C.8 – What is the percentage of total development projects that were conditioned to meet SUSMP requirements?

• Section IV.D.5 – How many building/grading permits were issued to sites requiring Local SWPPPs last year?

• Section IV.D.6 – How many building/grading permits were issued to sites requiring coverage under the General Construction Activities Stormwater Permit last year?

• Section IV.D.7 – How many building/grading permits were issued to construction sites less than one acre in size last year?

The Regional Board should also keep reporting simple and straightforward. Too much time is spent by agencies for compiling information that does not likely lead to any valuable assessment of a program's effectiveness. An online electronic reporting format (perhaps similar to the State's SMARTS system) should also be considered. Similarly, the Annual Report tables for IC and ID should be modified to eliminate confusion and improve the quality of data submitted and allow for an electronic method of tracking.

In addition, the tables related to industrial/commercial inspections (using "since permit adoption", "cycle" and "reporting year") should be modified, as they become confusing when inspections are done on a greater frequency than twice in a permit cycle, and also pose records retention conflicts when the present permit cycle has extended past the City's records retention policy.

Lastly, the wording of the receiving water limitations questions in the permit is unclear, causes confusion, and continues to be problematic (even in the new draft municipal NPDES permit). The City submitted comments to the Regional Board regarding some of these problems in the new draft municipal NPDES MS4 permit in its recent letter dated August 1, 2012. Therefore, the City of Malibu supports the language proposed by the California Stormwater Quality Association (CASQA), also supported by the LA Permit Group, which represents the majority of cities covered by the permit. The language was submitted by the LA Permit Group in its comment letter to the Regional Board for the new draft municipal NPDES permit, also dated August 1, 2012. The current standard for determining whether to check yes or no is too vague. Based on the new permit, and hopefully revised Receiving Waters Language, the annual report RWL question should be revised to account for the legal complexities associated with this section of the permit.